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MYCOLOGIA

VOL. VI

JULY, 1914

No. 4

ILLUSTRATIONS OF FUNGI—XVIII

WILLIAM A. MURRILL

The accompanying plates were made from specimens collected in the vicinity of New York City or in adjoining states within easy reach. The species selected are of such a character as to be well represented without the use of color. Several of them are of importance to the mycophagist.

***Lycoperdon Bovista* L.**

Lycoperdon giganteum Batsch

GIANT PUFFBALL

Plate 126. $\times \frac{1}{8}$

Peridium very large, globose or depressed-globose, sessile or nearly so, 20–35 cm. or more in diameter; surface glabrous or slightly flocculose, white, whitish, or slightly yellowish, becoming dingy with age; spores globose, greenish-yellow becoming dingy-olivaceous, 4μ ; capillitium greenish-yellow becoming dingy-olivaceous.

The giant puffball, easily recognized by its large size and smooth white appearance, occurs infrequently in fields, pastures, or woods throughout most of the United States, as well as in parts of Europe and Asia. The specimens here figured grew in Mrs. Boeder's yard in Williamsbridge, New York City, and were photographed by her. The species has also been collected at least twice in the hemlock grove in the New York Botanical Garden. Authentic records have been made of specimens three feet in diameter, but they rarely become much larger than a man's head. The flavor of

[MYCOLOGIA for May, 1914 (6: 103–159), was issued May 30, 1914]



LYCOPERDON BOVISTA L.

this species is particularly good, and little cooking is required. The writer remembers coming suddenly some years ago upon four large giant puffballs grouped picturesquely about an old stump in a beech grove near Ithaca, New York, and the pleasure he had, not only in gazing at them, but in getting them home and distributing them in quarter sections to a number of his friends.

***Lycoperdon pyriforme* Schaeff.**

PEAR-SHAPED PUFFBALL

Plate 127. $\times 1$

Peridium pear-shaped, $2.5-5 \times 2-3$ cm., dingy-white or brownish, with white, branching mycelium; cortex of thin, minute, often persistent scales or granules, or of short, stout spinules; inner peridium smooth, very thin, concolorous, opening apically; subgleba small, white, rather compact, of minute cells; spores globose, smooth, greenish-yellow to brownish-olive, $3.5-4 \mu$; capillitium of long, branched threads, which form a dense tuft in the center, columella present.

This species occurs very commonly in dense clusters on decayed wood or humus throughout most of the United States and Canada, as well as in Europe and Asia. As a rule, the smaller puffballs are poorly flavored and this one is particularly so; but it may be used when everything else is scarce. I have often eaten quite young specimens of this species late in the fall, flavoring them with bacon, parsley, onion, butter, salt, and pepper, and adding, if convenient, a few sporophores of the common mushroom.

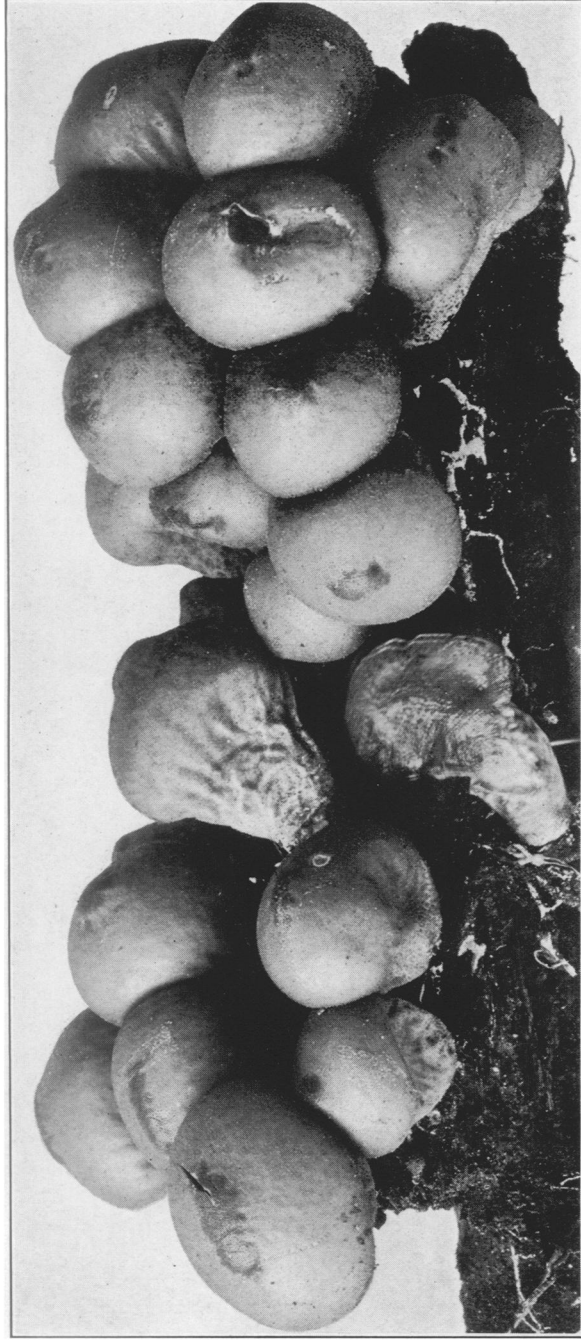
***Sparassis Herbstii* Peck**

HERBST'S SPARASSIS

Plate 128. $\times 1$

Sporophore much branched, whitish inclining to creamy-yellow, 10-12.5 cm. high and 12.5-15 cm. broad; branches numerous, thin, tough, moist, flattened, crescent, dilated above and spatulate or fan-shaped, often somewhat longitudinally curved or wavy, mostly uniformly colored, rarely with a few indistinct, nearly concolorous, transverse zones near the broad entire apices; spores subglobose or broadly ellipsoid, $5-6.2 \times 4-5 \mu$.

This species was originally described from specimens collected by Herbst at Trexlertown, Pa. The accompanying photograph is



LYCOPERDON PYRIFORME SCHÆFF.

from plants collected in wood's near New Rochelle, New York, by Miss Daisy Levy. This species is closely related to *Sparassis crispa*, which is often seen in European markets. It is edible, but unfortunately too rare to be of economic importance.

Asterophora Clavus (Schaeff.) Murrill

Nyctalis asterophora Fries

CLUB-SHAPED ASTEROPHORA

Plate 129. $\times 1$

Pileus hemispheric to depressed, usually distorted, gregarious, 1–2.5 cm. broad; surface white to fawn-colored or brownish, floccose, spongy, usually powdered with the brownish chlamydospores; margin involute, thick; context thick, fleshy, grayish-white, of farinaceous taste and odor; lamellae thick, dull-grayish, distant, adnate, usually undeveloped; spores not seen; chlamydospores large, stellate, brownish, 15–20 μ ; stipe pruinose, white to brownish, stuffed or hollow, brown within, 1.5–2.5 cm. long, 3–8 mm. thick.

This tiny and peculiar parasitic agaric occurs on decaying sporophores of *Russula*, *Lactaria*, *Chanterel*, *Clitocybe*, and other large species of gill-fungi throughout Europe and the eastern United States. The sporophores are usually partly decayed and blackened before the parasite comes to maturity. The gills are fold-like as in *Chanterel*, and the surface of the pileus often bears large star-shaped conidia, which give it a powdery appearance.

Collybia maculata (Alb. & Schw.) Quél.

SPOTTED COLLYBIA

Plate 130. $\times 1$

Pileus fleshy, firm, convex or nearly plane, 5–10 cm. broad; surface even, glabrous, white or whitish, often variegated with reddish spots or stains; context white; lamellae narrow, crowded, adnexed, sometimes nearly or quite free, white or whitish; spores subglobose, at times slightly apiculate at one end, 4–6 μ ; stipe firm, striate, white, usually stout, equal or subequal, often curved below, commonly attenuate and radicate at the base, 5–10 cm. long, 6–12 mm. thick.

This species is one of the largest of the genus and occurs in humus or on much decayed wood in woods throughout the greater

part of the eastern United States, as well as in Europe. The surface is usually decorated with reddish spots or stains, but varieties occur in which these spots are entirely absent.

Hygrophorus eburneus (Bull.) Fries

IVORY HYGROPHORUS

Plate 131. $\times \frac{2}{3}$

Pileus fleshy, moderately thick, sometimes thin, convex to expanded, 3–8 cm. broad; surface very viscid or glutinous, completely covered with a coating of gluten, entirely white; context having a mild and not unpleasant odor; lamellae strongly decurrent, distant, with vein-like elevations near the stipe; spores ovoid, granular $6-10 \times 5-6 \mu$; stipe spongy to stuffed within, sometimes hollow and tapering below, 6–15 cm. long, 3–8 mm. thick.

This attractive edible species is widely distributed throughout the cooler regions of Europe and America, occurring on the ground in woods or in partially shaded places. The writer found it to be one of the most common and abundant species on the Pacific coast. In many localities, a basketful could have been gathered in a very small area. Its white color, slimy covering, mild odor, and decurrent, distant gills will serve to distinguish it from closely related species.

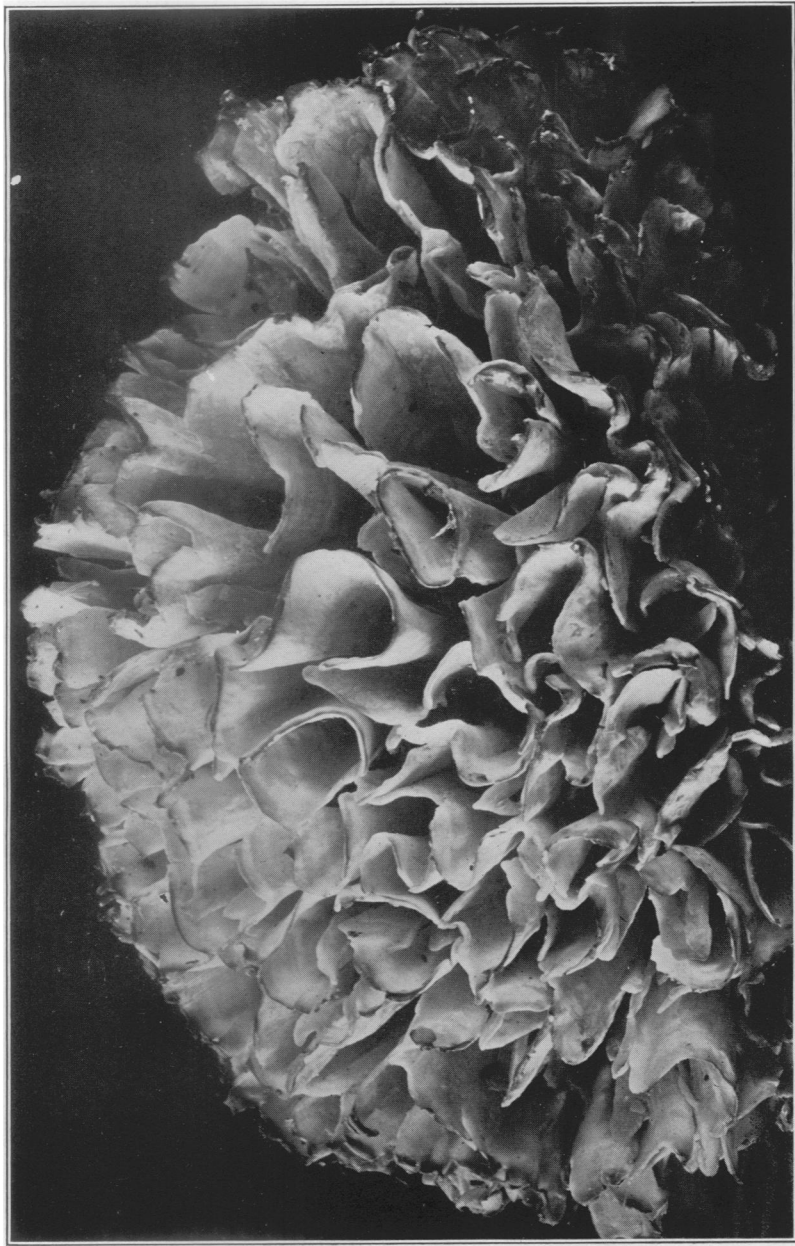
Lactaria piperata (L.) Pers.

PEPPERY LACTARIA

Plate 132. Lower Figure. $\times \frac{1}{2}$

Pileus fleshy, convex-umbilicate, at length infundibuliform, 4–12 cm. or more in diameter; surface white, azonate, dry, glabrous; margin involute at first and naked, at length uplifted; context compact, white, unchanging or becoming sordid, edible; latex white, unchanging, very acrid, abundant; lamellae white or creamy-white, forking dichotomously, close, more or less decurrent, arcuate at first, then extending upwards, only about 2 mm. broad; spores white, subglobose, nearly smooth, $8-9 \mu$ in diameter; stipe white, equal, dry, often pruinose, solid and firm, 2–8 cm. long, up to 2 cm. thick.

Found in great abundance in oak woods throughout temperate North America, as well as in Europe. It contains an acid and a resin, "piperon," which is extremely acrid in the fresh state, but



SPARASSIS HERBSTII PECK

is disorganized by heat. This species is therefore harmless when cooked, but is coarse and poorly flavored. If eaten, it must be carefully distinguished from poisonous species that are acrid in the fresh state.

Lepiota naucina (Fries) Quél.

SMOOTH LEPIOTA

Plate 133. $\times 1$

Pileus thick, globose to convex, 5–8 cm. broad; surface dry, usually white and smooth, at times slightly yellowish or granular on the disk; context firm, fleshy, white, mild; lamellae free, white, dull-pinkish with age; spores usually white in mass, rarely tinged with pink; stipe white, smooth, enlarged below, bearing a white annulus above, 6–10 cm. long, 8–16 mm. thick.

This excellent and widely distributed temperate species occurs in the autumn in lawns and pastures where the common mushroom grows and is often picked and thrown away because the lamellae are white. There is no harm in using it for food if the collector and those who may imitate him distinguish it carefully from the white variety of *Venenarius phalloides*, which is so common in this region and has been the cause of most of the deaths among mushroom eaters in the vicinity of New York City. It must be remembered that this deadly species is picked by some persons for the common mushroom, in spite of its white lamellae and bulbous stipe. How much more easily might *Lepiota naucina*, which has both characters, be confused with it! The deadly *Amanita phalloides* may be distinguished from *Lepiota naucina* by the “death-cup” at the base of the stipe, by the longer and usually more bulbous stipe, and by the gills remaining white instead of becoming slightly dull-pinkish with age.

Agaricus campester hortensis Cooke

GARDEN MUSHROOM

Plate 134. $\times \frac{3}{4}$

This variety of the common mushroom has been found in great abundance in an old pile of cow manure east of Bronx Park, partly shaded by weeds. It differs from the form usually found in pastures which was described and figured in MYCOLOGIA for March, 1909, chiefly in its slightly larger size, darker color, and more con-

spicuous scaly covering. This variety is often cultivated but is rarely found wild.

***Psathyrella disseminata* (Pers.) Quél.**

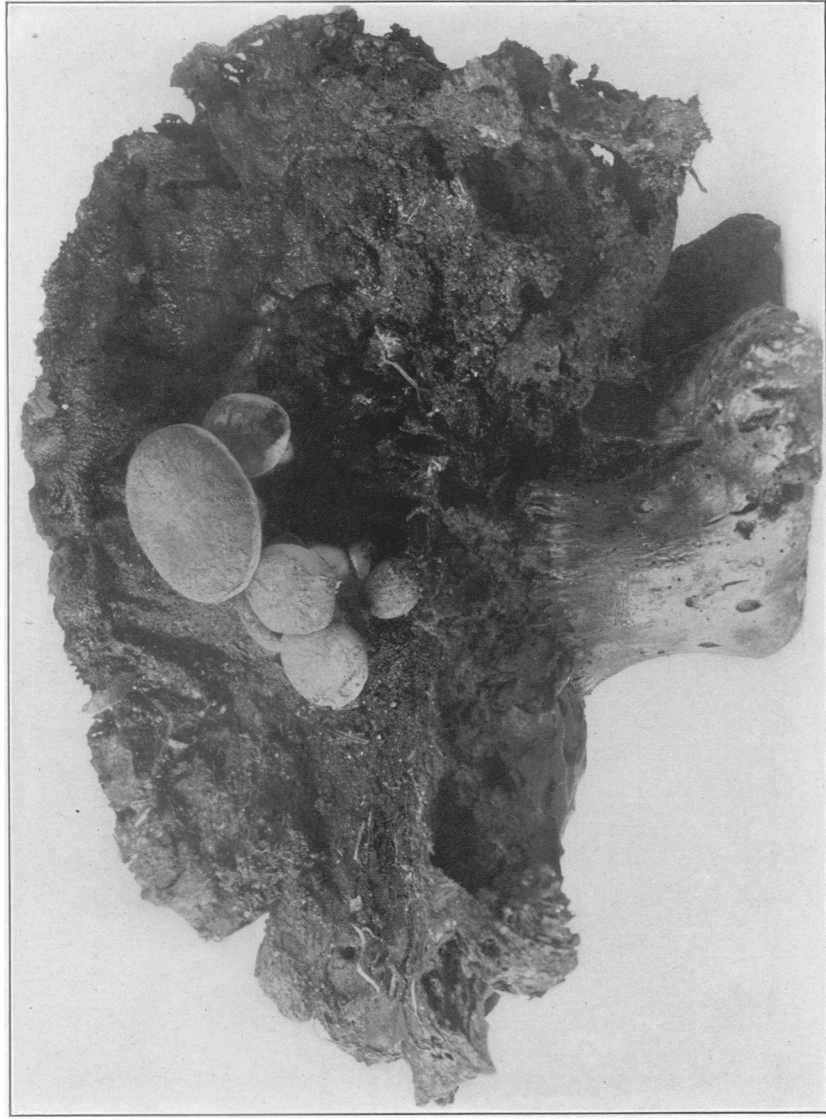
SCATTERED PSATHYRELLA

Plate 132. Upper Figure. $\times 1$

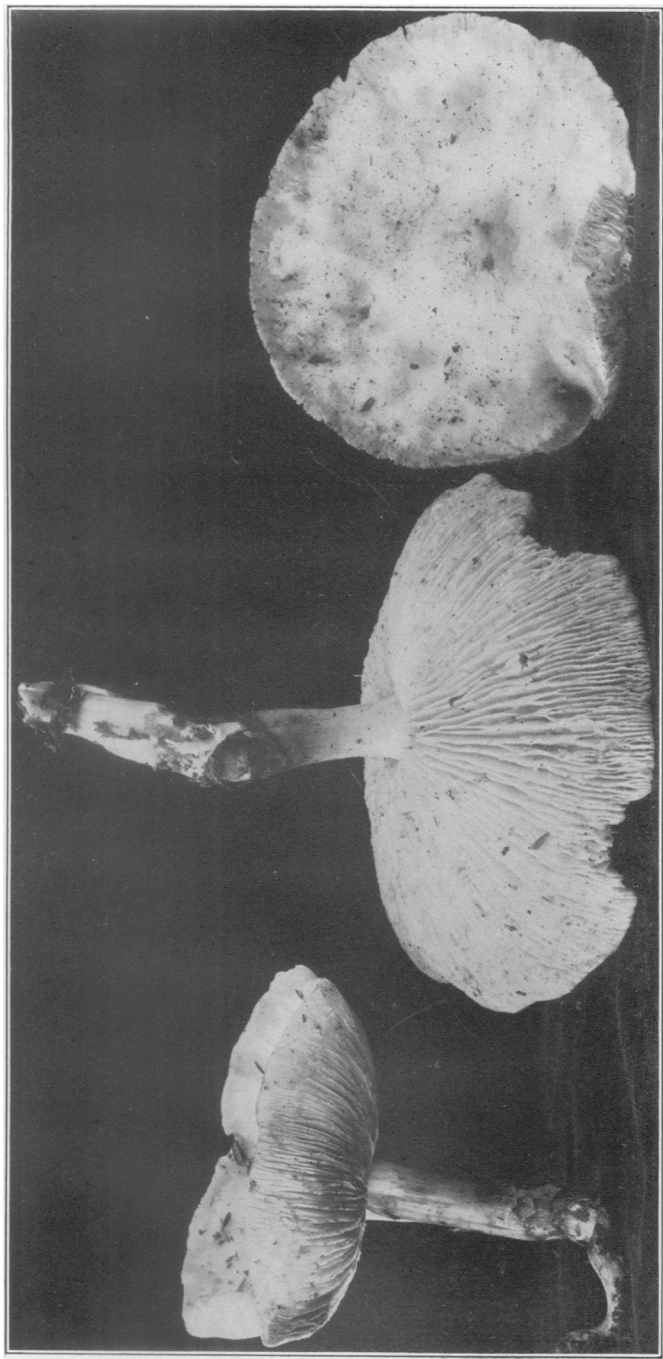
Pileus membranaceous, ovoid-campanulate, densely gregarious or cespitose, 6–10 mm. broad; surface minutely scaly becoming smooth, whitish, gray, or grayish-brown; margin sulcate-plicate, entire; lamellae adnate, broad, white to gray, then black; spores ellipsoid, $8 \times 6 \mu$; stipe furfuraceous to glabrous, yellowish to cinereous, very slender becoming hollow, often curved, about 2.5 cm. long and 1 mm. thick.

This small and very beautiful species is widely distributed in Europe and America on decayed wood and moist earth containing organic matter, the caps occurring in such large numbers in one spot that it is entirely impossible to count them. It may be looked for throughout the season from early summer until late autumn and it often appears on the soil in greenhouses during the winter. The species strongly suggests *Coprinus*, both in its mode of expanding and in blackening with age, when the black spores are mature.

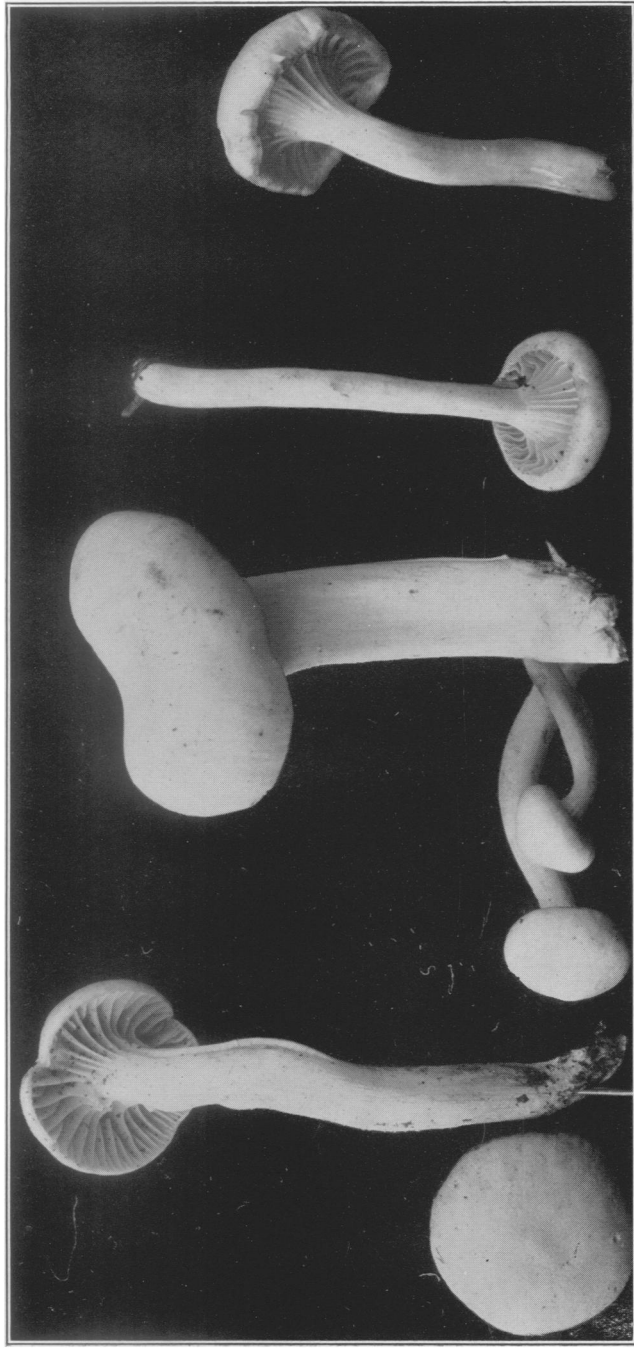
NEW YORK BOTANICAL GARDEN.



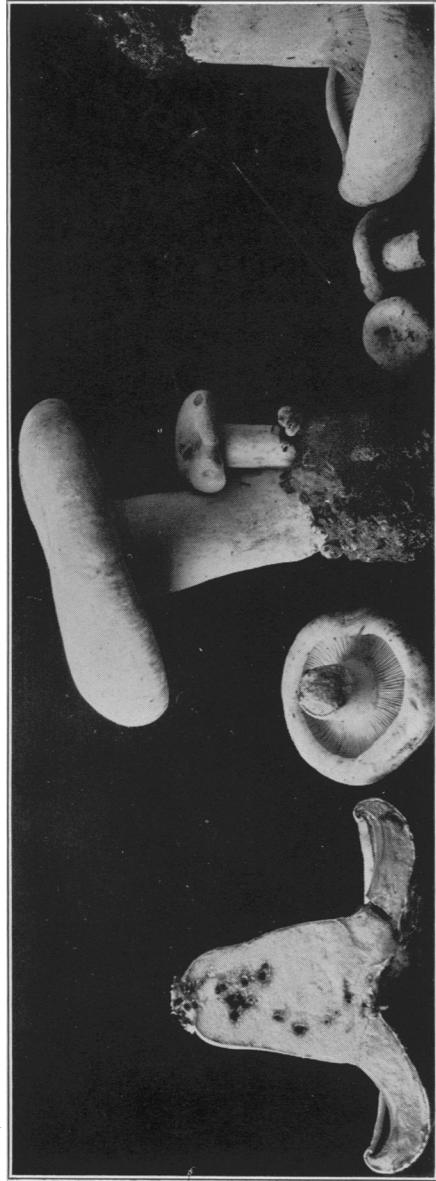
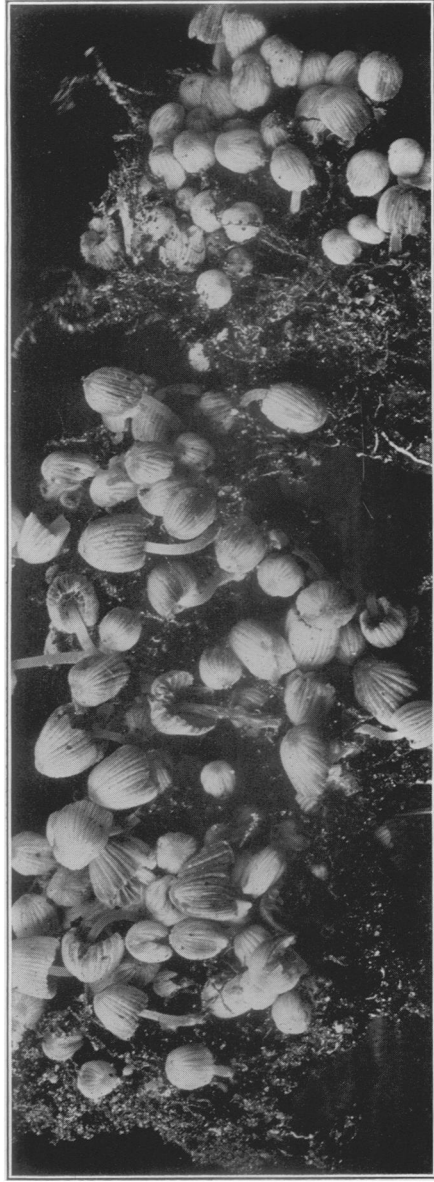
ASTEROPHORA CLAVUS (SCHÆFF.) MURRILL



COLLYBIA MACULATA (ALB. & SCHW.) QUÉL.



HYGROPHORUS EBURNEUS (BULL.) FRIES



UPPER FIGURE. *PSATHYRELLA DISSEMINATA* (PERS.) QUÉL.
LOWER FIGURE. *LACTARIA PIPERATA* (L.) PERS.



LEPIOTA NAUCINA (FRIES) QUÉL.



AGARICUS CAMPESTER HORTENSIS COOKE